

Appl. No. 10/605,422
Reply to Office action of August 13, 2007

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

- 5 1 (currently amended): A method for processing an image to increase sharpness of the image without changing hue characteristics, the method comprising:
- (a) performing a transformation process to transform an original image signal into CIE XYZ colorimetric channels;
 - (b) forming a luminance channel Y;
 - 10 (c) applying a filter on the luminance channel Y to obtain a processed luminance channel Y';
 - (d) computing processed colorimetric channels X' and Z' based on the processed luminance channel Y', wherein a relationship between the processed colorimetric channel X' and the colorimetric channel X satisfies the
15 equation $X'=(X/Y)*Y'$; and
 - (e) performing an inverse transformation process to transform the processed colorimetric channels X'Y'Z' into a processed image signal.
- 20 2 (original): The method of claim 1 wherein the filter applied in step (c) is an unsharp masking (USM) filter.
- 3 (original): The method of claim 1 wherein the filter applied in step (c) is a sharpness filter.
- 25 4 (original): The method of claim 1 wherein in step (a) the transformation process comprises transforming RGB values of the original image signal into CIE XYZ colorimetric channels.
- 30 5 (original): The method of claim 4 wherein in step (e) the inverse transformation process comprises transforming the processed colorimetric channels X'Y'Z' into

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R'G'B' values of the processed image signal.

6 (original): The method of claim 1 wherein in step (a) the transformation process
comprises transforming CMYK values of the original image signal into CIE
5 XYZ colorimetric channels.

7 (original): The method of claim 6 wherein in step (e) the inverse transformation
process comprises transforming the processed colorimetric channels X'Y'Z' into
C'M'Y'K' values of the processed image signal.
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8 (cancelled).

9 (original): The method of claim 1 wherein in step (d) a relationship between the
processed colorimetric channel Z' and the colorimetric channel Z satisfies the
equation $Z'=(Z/Y)*Y'$.
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10 (original): An image processing apparatus for implementing the method of claim 1.

11 (new): A method for processing an image to increase sharpness of the image
without changing hue characteristics, the method comprising:
20

(a) performing a transformation process to transform an original image signal
into CIE XYZ colorimetric channels;

(b) forming a luminance channel Y;

(c) applying a filter on the luminance channel Y to obtain a processed luminance
channel Y';
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(d) computing processed colorimetric channels X' and Z' based on the processed
luminance channel Y', wherein a relationship between the processed
colorimetric channel Z' and the colorimetric channel Z satisfies the equation
 $Z'=(Z/Y)*Y'$; and

30 (e) performing an inverse transformation process to transform the processed

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colorimetric channels $X'Y'Z'$ into a processed image signal.

- 12 (new): The method of claim 11 wherein the filter applied in step (c) is an unsharp
masking (USM) filter.
- 5 13 (new): The method of claim 11 wherein the filter applied in step (c) is a sharpness
filter.
- 10 14 (new): The method of claim 11 wherein in step (a) the transformation process
comprises transforming RGB values of the original image signal into CIE XYZ
colorimetric channels.
- 15 15 (new): The method of claim 14 wherein in step (e) the inverse transformation
process comprises transforming the processed colorimetric channels $X'Y'Z'$ into
 $R'G'B'$ values of the processed image signal.
- 20 16 (new): The method of claim 11 wherein in step (a) the transformation process
comprises transforming CMYK values of the original image signal into CIE
XYZ colorimetric channels.
- 17 (new): The method of claim 16 wherein in step (e) the inverse transformation
process comprises transforming the processed colorimetric channels $X'Y'Z'$ into
 $C'M'Y'K'$ values of the processed image signal.
- 25 18 (new): An image processing apparatus for implementing the method of claim 11.